

S. Lewis.
Water Dam.

N^o 85,598.

Patented Jan. 5, 1869.

Fig. 1.

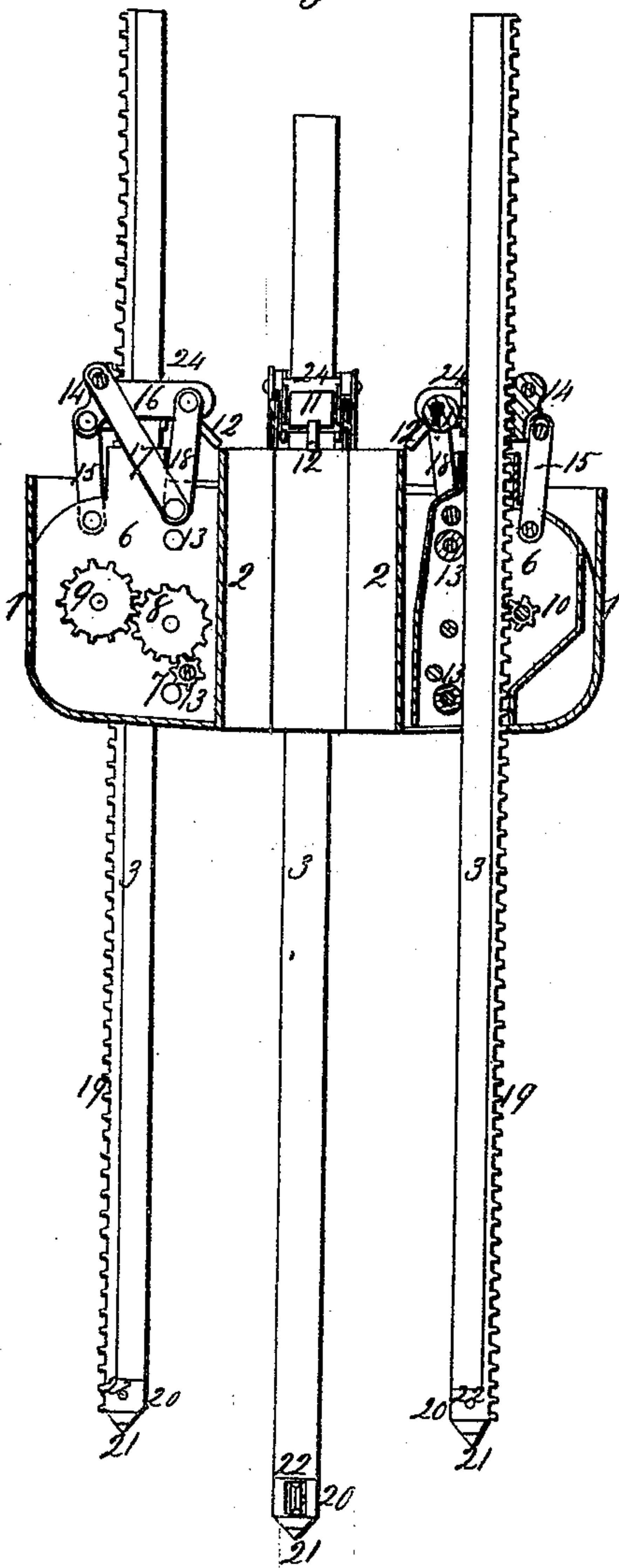


Fig. 2.

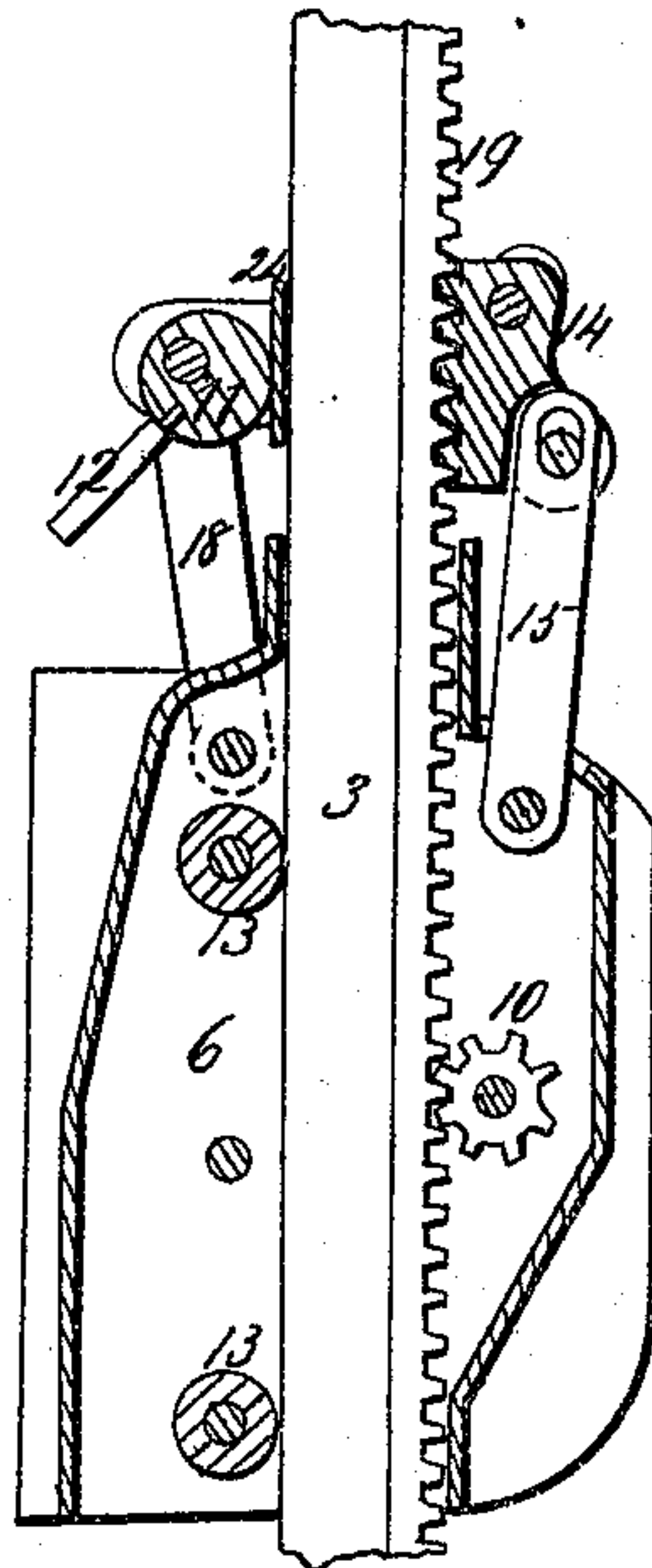
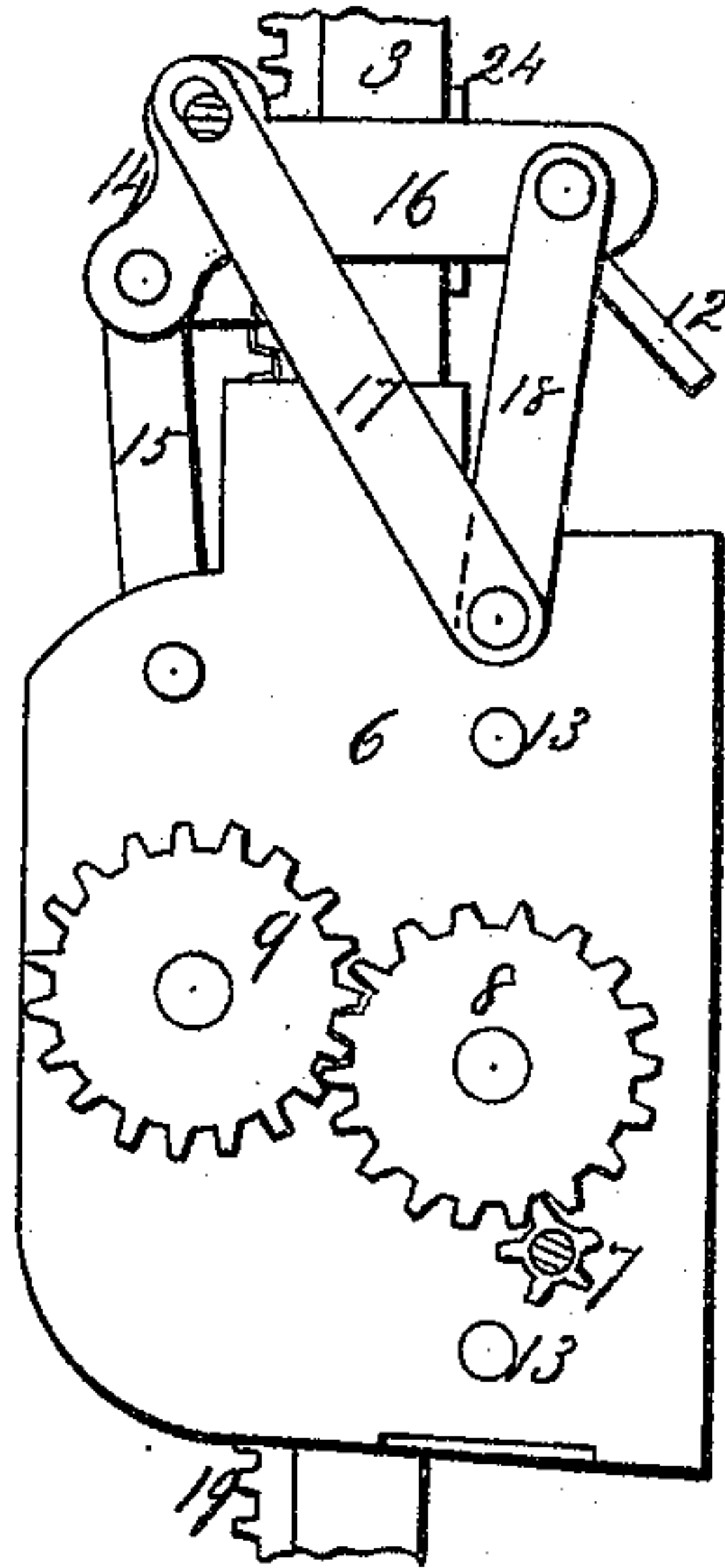


Fig. 3.



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Chas. B. Phillips.

Inventor;
S. Lewis
per Murray & Co.
attorneys

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Sheet 2-2, Sheets.

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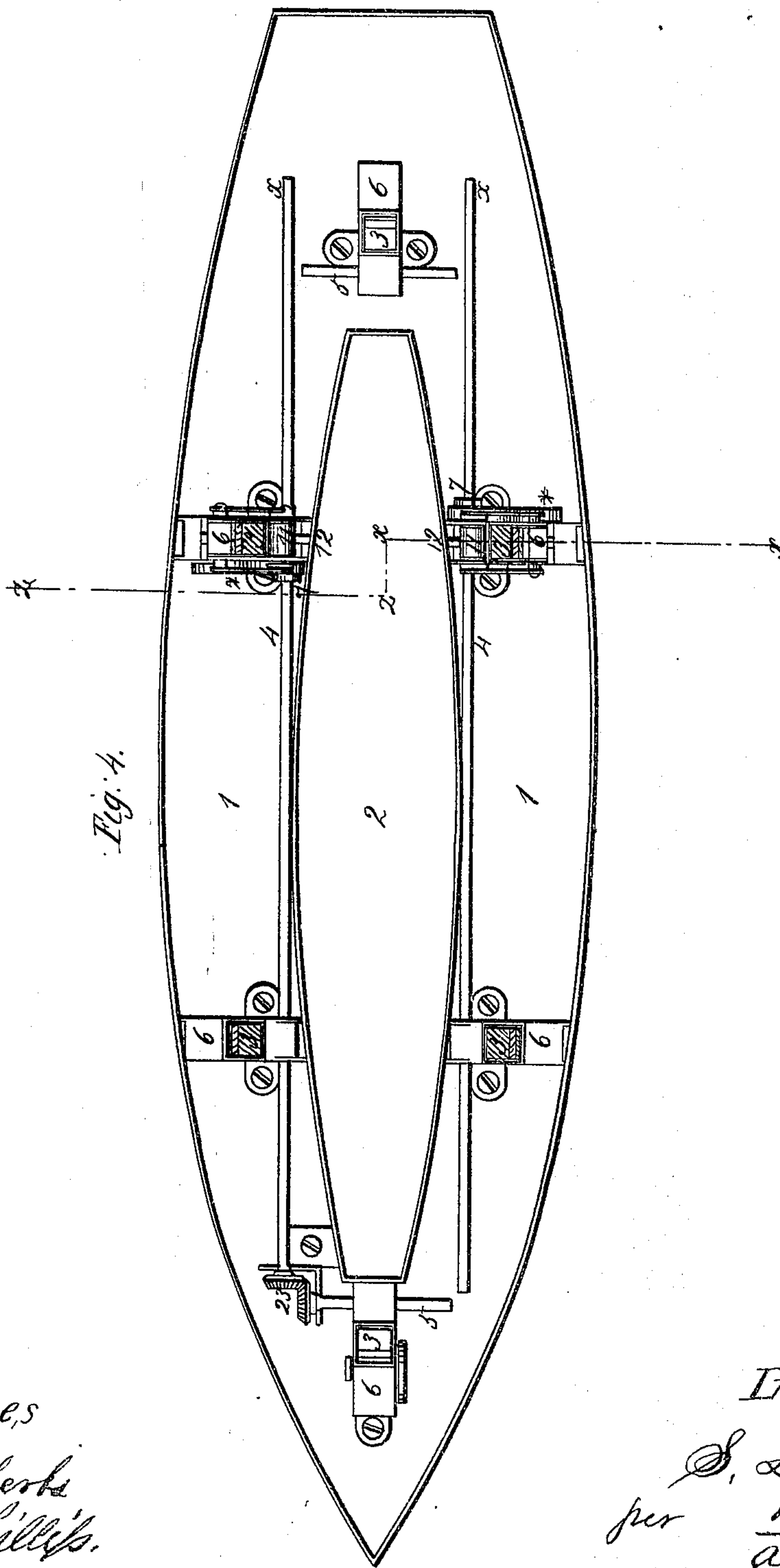


Fig. 4.

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United States Patent Office.

SAMUEL LEWIS, OF BROOKLYN, E. D., NEW YORK.

Letters Patent No. 85,598, dated January 5, 1869.

ADJUSTABLE STILL-WATER DAM.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SAMUEL LEWIS, of Brooklyn, E. D., in the county of Kings, and State of New York, have invented a new and useful Improvement in Portable Adjustable Still-Water Dam; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to new and important improvements in a portable adjustable still-water dam, for which Letters Patent were granted me on the 28th day of July, 1868; and

The invention and improvement consist in an arrangement whereby the boat or float, or vessel bearing the machinery, may be raised clear of the water, and be anchored to the bottom of a stream by long timbers or spuds, as will be hereinafter more fully described.

The present applicant, deeming the dam above referred to susceptible of improvement in certain parts and particulars, has added thereto the devices herein shown and explained.

The apparatus aforesaid, as patented, was defective in that the area of resisting-surface presented to the current by the hulls of a double or single boat, raft, float, or staging, was liable to throw too much strain upon the anchors, which strain, varying with the varying intensities of the current or tidal flow, would interfere somewhat with that rigid steadiness so essential to the operation of drilling under water.

The applicant also, upon reflection, concluded that the self-anchors in said patented dam might be greatly assisted by an extension of the principle, in the shape of spuds of greater strength, and set wider apart, with the entire weight of the boat or boats, raft, float, or staging, brought to bear upon them, by the elevation of the floating structure entirely out of the water, which would at once greatly reduce the surface exposed to the action of the current, and impart a far firmer hold of the spuds or vertical anchors to the bed of the stream.

Figure 1 is a vertical transverse section of a boat, or other support for the mechanism, the boxes or guides through which the spuds or vertical anchors, marked 3, slide, the mechanism for raising the hull or staging, and for retaining the same in an elevated position when its bulk has been raised from the water, and its entire weight thrown upon the vertical anchors or spuds.

The left-hand side of fig. 1 represents the box or guide 6, with its attachments, as viewed from the red line *z z*, Figure 4, and is duplicated in an enlarged size in Figure 3.

The right-hand side of fig. 1 represents the same box or guide as bisected vertically by the red line *z z*, fig. 4, and is shown enlarged in Figure 2.

Fig. 4 is a deck or plan view, showing the central

opening, to correspond to the telescopic or collapsible dam described in the patent aforesaid, the situations of the spuds, the direction and connection of the shafting, and a top view of the machine generally.

The shafting takes the power at $\times \times$, the revolution being from the top inward.

It will be seen that outside of each box or guide, on each of the shafts 4 4, is a pinion, 7, which gears into the wheel 8.

This pinion is slotted as if for a key, while the shaft has a corresponding rib or feather under the wheel 8, which, while the latter and pinion 7 are in gear, makes it a fast pinion; but when the boat or float has been raised and fastened in position, this pinion is, by a shifting-lever, or otherwise, thrown out of gear, on to the smooth part of the shaft, and becomes a loose pinion, thus setting the shafting free to operate other attachments for working the drills.

The spuds 3 having been lowered to the face of the rock, and the power put on it, it will be seen that the pinion 7 will be operated, which in its turn moves the wheel 8, the motion of which again is communicated to wheel 9, on the shaft or axle of which, and inside the box or guide, is the pinion 10.

The revolution of the latter, gearing into the metallic rack 9, forming one face of the spud, raises the boat or float to any desired height, and brings the entire weight of the upper works upon the spuds, thus imparting to the latter a firm hold on the bottom, while removing the boat entirely beyond the action of the current.

When the elevation has been completed, the handle 12 is put down, and the partial revolution of the eccentric on the plate 24, as shown, draws the stop-rack 14 into gear with the face of the spud, when the pinion 7 is thrown out of gear, as before mentioned, and the boat stands on the spuds as upon legs, while the shafting is free to be used, as before stated, for driving the drills.

Inside of the box or guide, at 13 13, are seen two friction-rollers, to give steadiness and free action to the guides on the spuds, while the eye in the upper end of the piece 15 is seen to have some play, to compensate for the varying curves described by the several parts of the clutch, composed of parts 11, 14, 16, 17, and 18, as seen in fig. 3.

When the handle 12 is raised, the spud and stop-rack are thrown out of gear, and the boat is then free to descend to its first floating position.

The spuds, as shown, are shod at their lower ends with a cast-iron casing, or a solid end, 20, in which is a sheave and pulley, 22, as shown, through which a chain is intended to pass from the lower section of the telescopic dam aforesaid to a windlass on deck, as a means of imparting additional steadiness to said dam.

The solid ends or casings aforesaid are, as seen at 21, finished with points of steel.

Having thus described my invention,
I claim as new, and desire to secure by Letters
Patent—

1. The combination of a boat, float, raft, or staging,
with spuds or vertical anchors, constructed and oper-
ating as shown, so that the weight of said boat, float,
raft, or staging, may be made to bear upon said spuds,
and, at the same time, be raised clear of the current
or tide, all as specified and described, and for the pur-
poses explained.

2. The clutch, composed of the parts 11, 14, 16, 17,
and 18, with the handle 12, constructed substantially
as shown, and for the purpose specified.

The above specification of my invention signed by
me, this 1st day of October, 1868.

SAMUEL LEWIS.

Witnesses:

FRANK BLOCKLEY,
ALEX. F. ROBERTS.